

### 1.3 Certification



**DANGER!**

For devices used in hazardous areas, additional safety notes apply; please refer to the Ex documentation.

**CE marking**



**The device meets the essential requirements of the EU Directives:**

- Electromagnetic Compatibility (EMC) directive
- The safety part of the Low-Voltage directive
- For devices used in hazardous locations: ATEX directive

The manufacturer certifies successful testing of the product by applying the CE marking. For more data about the EU Directives and European Standards related to this device, refer to the EU Declaration of Conformity. You can find this documentation on the DVD-ROM supplied with the device or it can be downloaded free of charge from the website (Download Center).

All devices are based on the CE marking and meet the requirements of NAMUR Recommendations NE 21, NE 43, NE 53 and NE 107.

### 1.4 Radio approvals

#### 1.4.1 European Union (EU)



**INFORMATION!**

**LPR (Level Probing Radar)** devices measure level in the open air or in a closed space (a metallic tank etc.). **TLPR (Tank Level Probing Radar)** devices measure level in a closed space only. You can use LPR devices for TLPR applications. The LPR and TLPR devices meet the requirements of the RED (Radio Equipment Directive) for use in the member countries of the EU.

For more data about the order code, refer to Order code on page 164.

This level transmitter is approved to be used outside metallic tanks. If you use the device in the open air, read the device nameplate to make sure that the device can be used for your application. Only the antennas that follow are permitted for open-air applications:

Antenna type	Order code
316L / DN80 (3") Metallic Horn	VFDExxxxxxxxxxxx4xxx...
316L / DN100 (4") Metallic Horn	VFDExxxxxxxxxxxx5xxx...
316L / DN150 (6") Metallic Horn	VFDExxxxxxxxxxxx6xxx...
316L / DN200 (8") Metallic Horn	VFDExxxxxxxxxxxx7xxx...
PTFE / DN80 (3") Drop	VFDExxxxxxxxxxxxExxx...
PTFE / DN100 (4") Drop	VFDExxxxxxxxxxxxFxxx...
PTFE / DN150 (6") Drop	VFDExxxxxxxxxxxxGxxx...
PEEK / DN80 (3") Drop	VFDExxxxxxxxxxxxKxxx...



## LPR (Level Probing Radar) devices only

Use approved personnel to install the device. If the device is operated in the open air (outdoors), it agrees with the RED (Radio Equipment Directive) if you obey these instructions:



- The antenna must always point downwards. The boresight direction of the antenna must be vertical. No other angles are permitted.
- Install the device more than 4 km / 2.485 mi away from radio astronomy sites.
- If the device is 4...40 km / 2.485...24.855 mi away from radio astronomy sites, do not install the device more than 15 m / 49.21 ft above the ground.



### CAUTION!

*If it is necessary to install the device less than 4 km / 2.485 mi from radio astronomy sites, you must get the approval of the national regulatory authority before installation (e.g. ANFR (France), Bundesnetzagentur (Germany), Ofcom (United Kingdom) etc.).*

## Radio quiet zones: locations of radio astronomy sites (stations) in Europe and northern Eurasia

Country	Name of the station	Location	
		Latitude, $\varphi$	Longitude, $\lambda$
Finland	Metsähovi	60°13'04" N	24°23'37" E
	Tuorla	60°24'56" N	22°26'31" E
France	Plateau de Bure	44°38'01" N	05°54'26" E
Germany	Effelsberg	50°31'32" N	06°53'00" E
Hungary	Penc	47°47'22" N	19°16'53" E
Italy	Medicina	44°31'14" N	11°38'49" E
	Noto	36°52'34" N	14°59'21" E
	Sardinia	39°29'50" N	09°14'40" E
Latvia	Ventspils	57°33'12" N	21°51'17" E
Poland	Kraków – Fort Skala	50°03'18" N	19°49'36" E
Russia	Dmitrov	56°26'00" N	37°27'00" E
	Kalyazin	57°13'22" N	37°54'01" E
	Pushchino	54°49'00" N	37°40'00" E
	Zelenchukskaya	43°49'53" N	41°35'32" E
Spain	Yebes	40°31'27" N	03°05'22" W
	Robledo	40°25'38" N	04°14'57" W
Switzerland	Bleien	47°20'26" N	08°06'44" E
Sweden	Onsala	57°23'45" N	11°55'35" E
UK	Cambridge	52°09'59" N	00°02'20" E
	Darnhall	53°09'22" N	02°32'03" W
	Jodrell Bank	53°14'10" N	02°18'26" W
	Knockin	52°47'24" N	02°59'45" W
	Pickmere	53°17'18" N	02°26'38" W

### 1.4.2 U.S.A. and Canada



#### **INFORMATION!**

**LPR (Level Probing Radar)** devices measure level in the open air or in a closed space (a metallic tank etc.). **TLPR (Tank Level Probing Radar)** devices measure level in a closed space only.

For more data about the order code, refer to Order code on page 164.

This level transmitter is approved to be used outside metallic tanks. If you use the device in the open air, read the device nameplate to make sure that the device can be used for your application. Only the antennas that follow are permitted for open-air applications:

Antenna type	Order code
316L / DN80 (3") Metallic Horn	VFDExxxxxxxxxxxx4xxx...
316L / DN100 (4") Metallic Horn	VFDExxxxxxxxxxxx5xxx...
316L / DN150 (6") Metallic Horn	VFDExxxxxxxxxxxx6xxx...
316L / DN200 (8") Metallic Horn	VFDExxxxxxxxxxxx7xxx...
PTFE / DN80 (3") Drop	VFDExxxxxxxxxxxxExxx...
PTFE / DN100 (4") Drop	VFDExxxxxxxxxxxxFxxx...
PTFE / DN150 (6") Drop	VFDExxxxxxxxxxxxGxxx...
PEEK / DN80 (3") Drop	VFDExxxxxxxxxxxxKxxx...



#### **LEGAL NOTICE!**

##### **FCC**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference which may cause undesired operation.

Changes or modifications made to this equipment not expressly approved by the manufacturer may void the FCC authorizations to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**LEGAL NOTICE!****IC**

*This device complies with Industry Canada licence-exempt RSS standard(s).*

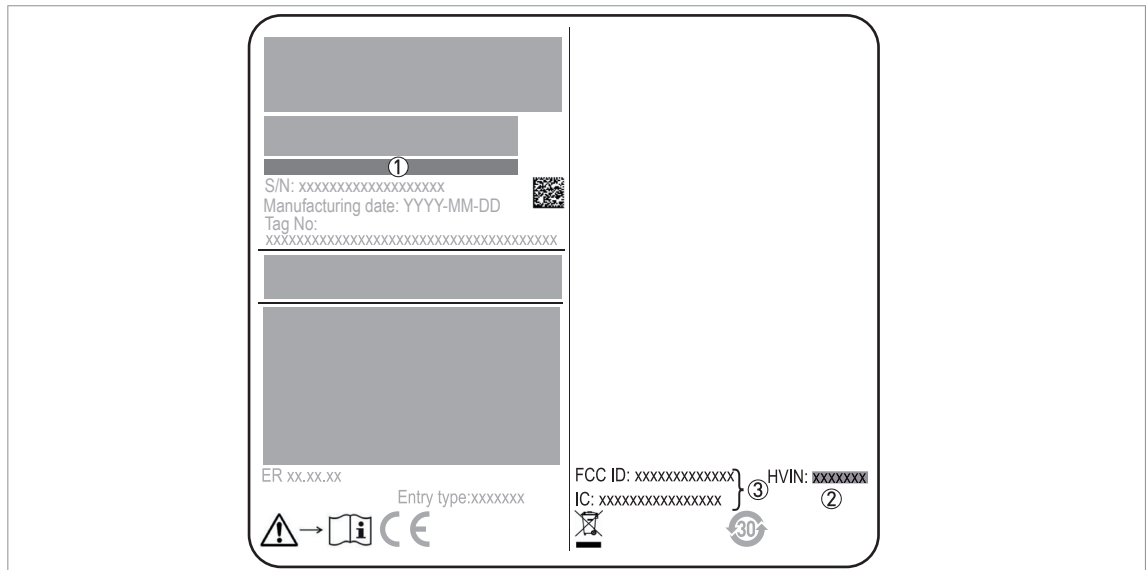
*Operation is subject to the following conditions:*

- 1. This device may not cause harmful interference, and*
- 2. this device must accept any interference received, including interference that may cause undesired operation.*

*This device and the handbook complies with the requirements of RSS-Gen. Operation is subject to the conditions that follow:*

- 1. The installation of the LPR/TLPR device shall be done by trained installers, in strict compliance with the manufacturer's instructions.*
- 2. The use of this device is on a "no-interference, no-protection" basis. That is, the user shall accept operations of high-powered radar in the same frequency band which may interfere with or damage this device. However, devices found to interfere with primary licensing operations will be required to be removed at the user's expense.*
- 3. The TLPR device shall be installed and operated in a completely enclosed container to prevent RF emissions, which can otherwise interfere with aeronautical navigation.*
- 4. LPR devices: Ensure a vertically downward orientation of the transmit antenna and an installation only at fixed locations.*
- 5. The installer / user of this device shall ensure that it is at least 10 km from the Dominion Radio Astrophysical Observatory (DRAO) near Penticton, British Columbia. The coordinates of the DRAO are latitude 49° 19'15" N and longitude 119° 37'12" W. For devices not meeting this 10 km separation (e.g. those in the Okanagan Valley, British Columbia) the installer / user must coordinate with, and obtain the written concurrence of, the Director of the DRAO before the equipment can be installed or operated. The Director of the DRAO may be contacted at 250-497-2300 (tel.) or 250-497-2355 (fax). Alternatively, the Manager, Regulatory Standards, Industry Canada, may be contacted.*

The Product Marketing Name (PMN) of devices with the HART output option (HART communication protocol) is "Optiwave x400 series". The Product Marketing Name of devices with one of the two available output options that use industrial computer network protocols (fieldbus) is "Optiwave x400 FF-PA series". "FF" refers to FOUNDATION™ fieldbus. "PA" refers to PROFIBUS PA.



**Figure 1-2: U.S.A. and Canada: radio approval information on the nameplate**

- ① Type code (defined in order). For more data, refer to *Order code* on page 164.
- ② HVIN (Hardware Version Identification Number). This number gives the radar signal frequency (24 GHz), the location of the device (T=TLPR or L=LPR) and the type of signal converter (compact [C])  
 TLPR device: HVIN: 24GHZ-T-C  
 LPR device: HVIN: 24GHZ-L-C
- ③ FCC ID and IC number  
 TLPR device: FCC-ID:Q6BFMCW24GX4T, IC number: 1991D-FMCW24GX4T  
 LPR device: FCC-ID: Q6BFMCW24GX4L, IC number:1991D-FMCW24GX4L